PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	11 May 2005 (11-05-2005)
Applicant's or agent's file reference 53389-233	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/CA2005/000019	07 January 2005 (07-01-2005)	09 January 2004 (09-01-2004)

International Patent Classification (IPC) or both national classification and IPC
IPC[7] C08L 23/12, 23/26, 23/16, 51/06, 33/06; C08J 7/06, 5/18; C09D 123/12; C23C 16/12.

Applicant
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1. This opinion contains indications relating to the following items :

[X]	Box No. I	Basis of the opinion
[ ]	Box No. II	Priority
[X]	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
[ ]	Box No. IV	Lack of unity of invention
[X]	Box No. V	Reasoned statement under Rule 43*bis*.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.
[ ]	Box No. VI	Certain documents cited
[X]	Box No. VII	Certain defects in the international application
[X]	Box No. VIII	Certain observations on the international application

2. FURTHER ACTION
If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CA *Canadian Intellectual Property Office* *Place du Portage I, C114 - 1st Floor, Box PCT* *50 Victoria Street* *Gatineau, Quebec K1A 0C9* Facsimile No: 001(819)953-2476	Authorized officer Lynda Loubier (819) 997-2959

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language which it was filed, unless otherwise indicated under this item.

   [ ] This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :

   a. type of material

      [ ] a sequence listing

      [ ] table(s) related to the sequence listing

   b. format of material

      [ ] in written format

      [ ] in computer readable form

   c. time of filing/furnishing

      [ ] contained in the international application as filed.

      [ ] filed together with the international application in computer readable form.

      [ ] furnished subsequently to this Authority for the purposes of search.

3. [ ] In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments :

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of :

[ ] the entire international application

[X] claim Nos. 1, 7-10, 12, 13, 19-22, 24-31, 37-40 and 42-47

because:

[ ] the said international application, or the said claim Nos. _____
relate to the following subject matter which does not require an international preliminary examination *(specify)* :

[X] the description, claims or drawings *(indicate particular elements below)* or said claim 1,7-10,12,13,19-22,24-31,37-40,42-47
are so unclear that no meaningful opinion could be formed *(specify)* :

Claims 1, 7-10, 12, 13, 19-22, 24-31, 37-40 and 42-47 relate to a polymer defined by a broad term, namely "alkene polymer". This expression relates to a large number of possible alkene polymers since said polymer is defined solely by reference to a desirable characteristic. The claims cover all possible alkene polymers whereas the application provides support within the meaning of Article 5 PCT for only a very limited number of such polymers. Therefore, an opinion is given based on alkene polymers having propylene monomers as described on pages 5 (line 23) to 6 (line1) and in examples I-XXX (see Tables 6-9).

[ ] the claims, or said claim Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

[ ] no international search report has been established for said claim Nos. _____

[ ] the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that :

the written form [ ] has not been furnished

[ ] does not comply with the standard

the computer readable form [ ] has not been furnished

[ ] does not comply with the standard

[ ] the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

[ ] See Supplemental Box for further details.

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	7, 19 and 37	YES
	Claims	1-6, 8-18, 20-36, 38-47	NO
Inventive step (IS)	Claims		YES
	Claims	1-47	NO
Industrial applicability (IA)	Claims	1-47	YES
	Claims		NO

2. Citations and explanations :

D1: US 2003/0130429 (ATOFINA) 10 July 2003
D2: US 2003/0092844 (ATOFINA) 15 May 2003
D3: WO 01/98386 (ATOFINA) 27 December 2001
D4: US 6017615 (HUNTSMAN POLYMERS CORP) 25 January 2000
D5: CA 2186009 (BP CHEMICALS PLASTEC GMBH; BOREALIS GMBH) 2 November 1995
D6: US 5272210 (CHEVRON RESEARCH AND TECHNOLOGY COMPANY) 21 December 1993
D7: US 6503635 (EXXON MOBIL OIL CORP) 7 January 2003
D8: JP 1282207 UBE INDUSTRIES 14 November 1989
D9: US 5235149 (SOCIETE ALSACIENNE D'ALUMINIUM) 10 August 1993

Novelty (art.33(2) PCT):

Claims 1 to 6, 8, 11 and 12 are not novel in view of D1.

D1 teaches a composition comprising a) a polypropylene homopolymer or copolymer and b) an ethylene/alkyl acrylate copolymer, and the use of the composition for manufacturing films (see page 1, par.0001,0002, 0009-0016, and claims 1-6). The composition used in D1 coincides with the composition given in present application's claims 1 to 6, 8, 11 and 12. Therefore, claims 1 to 6, 8, 11 and 12 are not novel. The subject matter of the present claims 7, 9, 10 and 13 to 47 is not disclosed explicitly in D1. Therefore, claims 7, 9, 10 and 13 to 47 are novel in view of D1.

In light of D1, claims 1 to 6, 8, 11 and 12 do not satisfy the requirement of Article 33(2) PCT with regard to novelty.

Claims 1 to 6, 9-18, 21-36 and 39-47 are not novel in view of D2 and D3.

D2 teaches a composition which is made by blending a) an isotactic polypropylene homopolymer or copolymer and b) a carboxylic acid-graft isotactic polypropylene or a maleic anhydride grafted blend of a polypropylene with an ethylene copolymer. The carboxylic acid is an acrylic acid. The ethylene copolymer may be a metallocene VLDPE or LLDPE. The composition is useful in the manufacture of multilayer structures for packaging. The multilayer structure comprises a layer comprising the composition and directly attached to this layer, a metal layer (aluminum)(see page 1 par.0010-0017, page 2 par.0031-0049, page 3 par.0052-005 and page 5 par.0108-0116). D3 teaches a binder useful in the manufacture of multilayer materials for packaging. The multilayer materials comprise a layer comprising a binder and directly attached to this layer, a metal layer (aluminum). The multilayer materials can also be three-, four or five-layers structures. The binder is made by blending a) a carboxylic acid-graft syndiotactic polypropylene or a maleic anhydride grafted blend of a polypropylene with an ethylene copolymer and b) a polyolefin (for example: polypropylene, propylene copolymer or propylene terpolymer). The carboxylic acid is an acrylic acid or methacrylic acid. The ethylene copolymer may be a metallocene VLDPE or LLDPE. The propylene copolymer is a propylene/ethylene or propylene/butene. The propylene terpolymer is a propylene/ethylene/butene terpolymer(see pages 3(line 14) to 7(line 4), pages 11(line 19) to 12(line 29) and claims 1-4 and 10). The composition and its preparation used in D2 and D3 coincide with the composition and the method given in present application's claims 1-6, 9-12, 31-36 and 39-47. Furthermore, the multilayer film comprising a metal film (aluminum) used in D2 and D3 also coincides with the packaging film given in present application's claims 13-18 and 21-30. Therefore, claims 1 to 6, 9-18, 21-36 and 39-47 are not novel. The subject matter of the present claims 7, 8, 19, 20, 37 and 38 is not disclosed explicitly in D2 and D3. Therefore, claims 7, 8, 19, 20, 37 and 38 are novel in view of D2 and D3.

See Supplemental Box for further details.

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted :

The use of the term "polypropylene" in the expression "a maleic anhydride grafted blend of a propylene copolymer with an ethylene copolymer, preferably the polypropylene is a propylene copolymer...." used on page 7(par.0031) of the specification is ambiguous. The blend comprises a propylene copolymer, and not a polypropylene.

The base resin "co-PP" used in Table 2 (see components A, B and C) has not been defined.

In Table 3, the modifier H has not been indicated (see the reference to the modifier H in Table 4, page 13). It is noted that the letter "H" has already been used in Tables 6 and 8.

The expression "A method to any one.." in claims 43 and 44 is in error and should be read "A method according to any one...".

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

The following points do not meet the requirements of Article 6 PCT:

1. The polymeric composition comprising a polymeric matrix comprising an alkene polymer used in claims 31 to 49 is in contradiction with the polymeric composition comprising an alkene polymer used in the description. It is noted that the polymeric matrix has been mentioned on pages 5(lines 1-2) and 8(line 23) to 9(line 3). But on pages 5(line 23) to 6(line 1) and in examples I-XXX (see Tables 6-9), it is stated that the polymeric composition comprises an alkene polymer, and not a polymeric matrix comprising an alkene polymer. Furthermore, the expression "polymeric matrix" appears to lack clarity in that it may be understood, for example, as an alkene polymer or as comprising other components. Therefore, it is not clear what the expression "polymeric matrix comprising an alkene polymer" is intended to mean in the claims. Furthermore, the applicant did not provide any evidence demonstrating that the desirable results can be acheive with a polymeric matrix.

2. In claims 7, 19 and 37, the use of the maleic anhydride grafted linear low density polyethylene made from a Ziegler-Natta catalyst is confusing. On pages 6(line 28) to 7(line 2), it is stated that poorer adhesion to metals is obtained through the use of maleic anhydride grafted sources made from conventional LLDPE's where the polymerization catalyst is a Ziegler-Natta catalyst.

3. In claims 10, 22 and 40, the use of the term "polypropylene" is superfluous; and renders the claims unclear.

4. There is no support in the description for the subject matter "4-6% by weight of ethylene monomers" of claims 11, 23 and 41.

5. In claims 31-47, the expression "A method" is confusing. It seems that claims 31-47 teach "a process" for preparing a composition, and not a method.

6. The subject matter "a concentrate of maleic anhydride" of claim 44 is not within the scope of claims 31-42.

7. The subject matter "a layer of aluminium" of claims 46 and 47 is not within the scope of claims 31-45. Claims 31- 45 teach the preparation of a composition, and not a preparation of a multilayer film.

Claims 1, 7-10, 12, 13, 19-22, 24-31, 37-40 and 42-47 relate to a polymer defined by a broad term, namely "alkene polymer". This expression relates to a large number of possible alkene polymers since said polymer is defined solely by reference to a desirable characteristic. The claims cover all possible alkene polymers whereas the application provides support within the meaning of Article 5 PCT for only a very limited number of such polymers, namely an alkene polymer having propylene monomers as described on pages 5(line 23) to 6(line 1) and in examples I-XXX (see Tables 6-9).

A statement in an application, such as found on page 3(lines 9-10), which incorporates by reference any other document, does not comply with Article 5 PCT.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box No. V

In light of D2 and D3, claims 1 to 6, 9-18, 21-36 and 39-47 do not satisfy the requirement of Article 33(2) PCT with regard to novelty.

Claims 1-6, 11-18, 20, 23-36, 38 and 41-47 are not novel in view of D4.

D4 teaches co-extruded multi-layer polyolefin film products which are adapted for use in the packaging industry. The films have improved physical properties and comprise at least three layers of two outer layers and an intermediate or core layer sandwiched therebetween wherein all of the layers are chlorine-free, exhibit improved clarity, autoclavability, gloss, and dart impact properties. The films are well-suited for the packaging of medical products and foodstuffs. A layer of the film comprises a metal (aluminum). At least one of said outer layer comprises a polymeric material made by blending a) a polypropylene and b) a polymer selected from ethylene/methylacrylate copolymer, ethylene/acrylic acid copolymer, ethylene/methacrylic acid copolymer, ethylene/vinylacetate copolymer, acid or anhydride modified ethylene vinyl acetate copolymer, ethylene/polyacrylate copolymer and ethylene/ester copolymer(see col.1 to col.3 and claims 1 and 11). The polymeric material and its preparation used in D4 coincide with the composition and the method given in present application's claims 1-6, 11, 12, 31-36, 38 and 41-47. Furthermore, the multilayer polyolefin film comprising a metal film (aluminum) used in D4 also coincides with the packaging film given in present application's claims 13-18, 20, 23-30. Therefore, claims 1-6, 11-18, 20, 23-36, 38 and 41-47 are not novel. The subject matter of the present claims 7-10, 19, 21, 22, 37, 39 and 40 is not disclosed explicitly in D4. Therefore, claims 7-10, 19, 21, 22, 37, 39 and 40 are novel in view of D4.

In light of D4, claims 1-6, 11-18, 20, 23-36, 38 and 41-47 do not satisfy the requirement of Article 33(2) PCT with regard to novelty.

Claims 1-4, 8, 11-16, 20, 23, 24, 27, 31-34, 38, 41-43 are not novel in view of D5.

D5 teaches a film having at least two layers, which can be coextruded, characterized in that the external layer is a sealing layer. A layer of the film comprises aluminum. The sealing layer is formed of a material comprising a mixture of two polymer components, wherein the first component (A) consists of a polypropylene copolymer with an ethylene, and wherein the second component (B) is selected from ethylene/vinyl acetate copolymer, ethylene/methyl or ethyle acrylate copolymer and ethylene/vinyl acetate grafted with maleic anhydride. The film is used for blister packagings(see pages 1-4 and claims 18-25). The mixture and its preparation used in D5 coincide with the composition and the method given in present application's claims 1-4, 8, 11, 12, 31-34, 38 and 41-43. Furthermore, the film used in D5 also coincides with the packaging film given in present application's claims 13-16, 20, 23, 24 and 27. Therefore, claims 1-4, 8, 11-16, 20, 23, 24, 27, 31-34, 38, 41-43 are not novel. The subject matter of the present claims 5-7, 9, 10, 17-19, 21, 22, 25, 26, 28-30, 35-37, 39, 40 and 44 to 47 is not disclosed explicitly in D5. Therefore, claims 5-7, 9, 10, 17-19, 21, 22, 25, 26, 28-30, 35-37, 39, 40 and 44 to 47 are novel in view of D5.

In light of D5, claims 1-4, 8, 11-16, 20, 23, 24, 27, 31-34, 38, 41-43 do not satisfy the requirement of Article 33(2) PCT with regard to novelty.

Claims 1-4, 8 and 11 are not novel in view of D6.

D6 teaches a composition comprising a propylene/ethylene copolymer and an ethylene/alkyl acrylate copolymer, and a film made from the composition(see claims 1-10 and 13). The composition used in D6 coincides with the composition given in present application's claims 1-4, 8 and 11. Therefore, claims 1-4, 8 and 11 are not novel. The subject matter of the present claims 5-7, 9, 10 and 12-47 is not disclosed explicitly in D6. Therefore, claims 5-7, 9, 10 and 12-47 are novel in view of D6.

In light of D6, claims 1-4, 8 and 11 do not satisfy the requirement of Article 33(2) PCT with regard to novelty.

Claims 1-3, 12-15, 24-33 and 41-47 are not novel in view of D7.

D7 teaches a multi-layer film for the purposes of providing a barrier to oxygen and moisture. The film comprises a thin metal layer bound to a polymeric metallizable layer that comprises a blend made by blending of syndiotactic polypropylene and a graft copolymer of ethylene-propylene and maleic anhydride (col.4 lines 53-55 and claim 2). The film also includes an additional polypropylene layer and one or more other layers (col.4 line 62 to col.6 line 23). Preferably the metal layer is one of vacuum-deposited aluminum (co.6 lines 24-29). The blend and its preparation used in D7 coincide with the composition and the method given in present application's claims 1-3, 12, 31-33 and 41-47. Furthermore, the film used in D7 also coincides with the packaging film given in present application's claims 13-15 and 24-30. Therefore, claims 1-3, 12-15, 24-33 and 41-47 are not novel. The subject matter of the present claims 4-11, 16-23 and 34-40 is not disclosed explicitly in D7. Therefore, claims 4-11, 16-23 and 34-40 are novel in view of D7.

In light of D7, claims 1-3, 12-15, 24-33 and 41-47 do not satisfy the requirement of Article 33(2) PCT with regard to novelty.

In light of D1- D7, claims 7, 19 and 37 do satisfy the requirement of Article 33(2) PCT with regard to novelty.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box. No V

Inventive Step (art.33(3)PCT):

Claims 1-47 do not involve an inventive step.

The problem to be solved is to provide modifiers having polar functional groups, improving the binding of propylene polymers to a metal film. The solution is blending a) a modifier selected from the group consisting of a maleic anhydride grafted ethylene copolymer, an ethylene copolymer containing acid monomers and/or ester monomers, an acid-grafted propylene copolymer, and a maleic anhydride grafted blend of a propylene copolymer with an ethylene copolymer, with b) a propylene polymer selected from a polypropylene, a copolymer of propylene and ethylene, a copolymer of propylene and butene or a terpolymer of propylene, ethylene and butene. The resultant polymeric composition obtained from the blend of the modifier with the propylene polymer adheres well to metal films and particularly to aluminum films, and has acceptable rheology making the composition efficient to use in co-extrusion process (see pages 2(par. 0006) to 3(par.0009) and 6(par. 0023)). The polymeric composition is used to produce metallizable films, particularly for the production of barrier food wraps requiring adhesion of a metallizable film to a metal layer (see page 4(par. 0013) and pages 7(par.0032) to 8(par.0037).

D1 and D6 teach the use of an ethylene/alkyl acrylate copolymer in a polypropylene composition for manufacturing films. The distinguishing feature of the present application with respect to D1 and D6 is the metallizable polymeric composition and the metallizable film.

D2 and D3 teach the use of a carboxylic acid-graft polypropylene or a maleic anhydride grafted blend of a polypropylene with an ethylene copolymer (such as metallocene VLDPE or LLDPE) in a polypropylene composition. The polypropylene can also be a propylene copolymer (propylene/ethylene or propylene/butene) or a propylene terpolymer (propylene/ethylene/butene terpolymer). The composition is useful in the manufacture of multilayer structures for packaging. The multilayer structure comprises a layer comprising the composition and directly attached to this layer, a metal layer (aluminum). The multilayer materials can also be three-, four or five-layers structures.

D4 teaches the use of a maleic anhydride grafted ethylene copolymer or various ethylene copolymers containing acid monomers and/or ester monomers in a polymeric material containing a polypropylene for manufacturing co-extruded multi-layer film products which are adapted for use in the packaging industry. The films are well-suited for the packaging of medical products and foodstuffs. A layer of the film comprises a metal (aluminum).

D5 teaches the use of a maleic anhydride grafted ethylene copolymer or ethylene copolymers containing ester monomer in a propylene/ethylene copolymer composition for manufacturing a film having at least two layers, which can be coextruded, characterized in that a layer of the film comprises aluminum.

D7 teaches the use of a maleic anhydride graft ethylene-propylene copolymer in a polypropylene blend for manufacturing a multi-layer film for the purposes of providing a barrier to oxygen and moisture. The film comprises a thin metal layer (vacuum-deposited aluminum) bound to a polymeric metallizable layer that comprises the blend.

As noted above , D2, D3, D4, D5 and D7 teach the use of various polymers having polar functional groups (maleic anhydride, acid monomers, ester monomers), in propylene polymer composition for manufacturing films, in that a layer of the film comprises aluminum.

D8 teaches the use of an unsaturated carboxylic acid-grafted propylene-ethylene copolymer, having 71-95mol% propylene component and 5-29mol% ethylene component, as modifier of many resins having excellent adhesion properties. D9 teaches the use of various polymers grafted with acrylic acid or maleic anhydride in a binder layer for manufacturing caps. The various polymers are chosen from polyethylene, polypropylene, copolymers of propylene/vinyl acetate and copolymers of ethylene/methyl acrylate (see col.5 lines 38-48). The distinguishing features of the present application with respect to D8 and D9 is the polymeric composition comprising a propylene polymer and the metallizable film.

Therefore, as taken together, D1-D9 would have guided a skilled person to use maleic anhydride grafted ethylene copolymers, ethylene copolymers containing acid monomers and/or ester monomers, acid-grafted propylene copolymers, and a maleic anhydride grafted blend of a propylene copolymer with an ethylene copolymer, for improving the binding of propylene polymers to a metal film. Therefore, claims 1 to 47 do not involve an inventive step.

In light of D1-D9, claims 1-47 do not satisfy the requirement of Article 33(3)PCT with regard to inventive step.

Industrial Applicability (art.33(4) PCT):

Claims 1-47 are considered to be industrially applicable and thus fulfilling the requirements of Article 33(4) PCT.